

**(P2-35) Loose Livestock in Disaster and Emergency Situations, Risks to the Public and Emergency Responders**  
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**Introduction:** The general public's association with livestock (cattle, sheep and horses) raises a need for public safety. During emergency/disasters, animals are accidentally/intentionally released from containment structures. Loose livestock become agitated with unpredictable behavior which is a risk to both humans and animals. Specific training/protocols for responders are necessary for dealing with livestock.

**Problem:** Livestock running loose in populated areas raises risks to people, especially during capture attempts. Untrained personnel subject themselves to undue danger when assisting with livestock capture. Capture plans should be in place in advance and training should be provided to first responders on safety issues regarding animals.

**Methods:** A review of a loose livestock event brought forth the following considerations: (1) Evaluate the risks of a loose livestock/public event; (2) Inspect containment facility and identify secondary containment barriers, including fencing, buildings, rivers, etc.; (3) Develop plan for capture and containment within the immediate facility and surrounding area; (4) Provide training: training exercises, animal capture, basic animal behavior, and Incident Command System for first responders; (5) Arrange for emergency care or humane euthanasia for injured animals; (6) Coordinate capture and transport activities with local livestock experts.

**Results:** Production of a comprehensive loose livestock plan can prevent injury and/or death to both people/animals. Agencies involved in safety and emergency response should have a well written plan that can be used by all appropriate local agencies involved in loose livestock response. The utilization of a loose livestock worksheet (template) with professional training is essential for emergency response agencies.

**Conclusion:** Disaster managers should develop a comprehensive plan and training program with other local agencies in advance of an event to respond effectively to capture loose livestock.

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**(P2-36) Evolution of Pet Owner Disaster Preparedness - California Wildfires from 2003 to 2009**

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California wildfires are expected and they are followed by landslides and floods. A changing culture in traditional responders has co-evolved with a culture of pet owner disaster preparedness in California. This is demonstrated by the documentation of the in California wildfires from 2003–2009. The 2003 wildfires in San Diego County involved a massive relocation of people, small companion animals and over 700 horses. It was a milestone event in allowing co-located human and animal shelters.

The intent was for animals to be maintained in adjacent shelters, but the result was humans taking up residence with their animal companions. Pet owners sought to keep their family, including their pets, together. It appeared that pets were providing comfort to their owners. In the same region during 2007, pet owners mobilized rapidly. They were clearly more prepared than they were in 2003. During 2008, a record 1400 fires were burning in California on July 1st. The Santa Barbara Gap Fire mobilized an expert Santa Barbara Equine evacuation team. The human Red Cross evacuation center allowed small animal cohabitation. At the same time, the Butte Lightning Complex fires (37 fires) involved a unique cohort of canine evacuees for an extended duration and requiring unprecedented veterinary volunteers. In 2009, the Santa Barbara Jesusita fire threatened an urban area and evacuation of 35,000 people. It included a vulnerable human population with health disabilities that required ambulance evacuation assistance. Small companion animals were allowed to evacuate in the front cab of the ambulance. Ambulance drivers remarked that they dreaded forcing patients to leave behind their pets and it was a relief to bring the pets along. In summary, the response to repeated California wildfires from 2003 to 2009 has demonstrated an evolving culture of animal disaster preparedness for both traditional responders and companion animal owners.

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**(P2-37) The Triage and Medical Management of Alcoholized/Intoxicated Patients at the Zurich "Street Parade", One of the Biggest "Techno Dance Parades" of Europe**

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**Background:** Every year, the City of Zurich hosts the "Street Parade". This is one of the biggest European "techno parade" dance parties attracting way over a half a million mostly young people who party on a 2 km route along the lakeside of the City. Many of these guests drink alcohol and some eventually consume other drugs (e.g., GHB, Ecstasy, LSD). Combinations of these drugs may affect conscience eventually leading to a critical medical condition. Until recently the emergency-posts at the scene, as well as the emergency rooms of the local hospitals have been "flooded" with such patients, leading to obvious logistical problems.

**Discussion of Intervention:** Over the last years the Ambulance Service of the City of Zurich utilized an unused shelter close to the event scene, where these "intoxicated" mostly young patients were medically supervised and taken care of. The shelter has room for 108 patients. Every patient is first triaged; if a patient suffers from something else than just "intoxication" (e.g., cuts from broken glass) he is sent directly to the hospital for adequate treatment. The patients are then numbered, if needed showered, and receive a bed where they are regularly assessed for pulse, oxygen saturation, blood pressure and GCS by professional personnel. In parallel, if their clothes are dirty, they are washed and dried so the patient will have something clean to dress at the moment of dismissal. The average time of the patients in this shelter is 3 hours 7 minute and the charge is 600 CHF (approx

620 USD). This system has been so helpful for the hospitals, they now supply medical personnel for no cost.

**Conclusion:** This system of triage and separate medical supervision of “simply” intoxicated patients has been successful in the management of a large number these kind of patients.

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### (P2-38) Operational Response to a Gastroenteritis Outbreak in the Emergency Department

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Mass gatherings can be disruptive to the daily operations of any emergency department (ED). These events usually are spontaneous and sudden. Therefore, operational processes must be effective and concise when dealing with a sudden surge. This study examines the Tan Tock Seng Hospital (TTSH) ED response process to a gastroenteritis (GE) outbreak. Prompt identification and establishment of a casualty holding and treatment area ensured smooth operational capacity, which allowed these patients to be segregated from the mainstream ED crowd and more specific care to be rendered. Entrance and exit points of the designated area were established with controlled access to prevent cross-contamination with the mainstream patient load. Patients with GE who presented with acute symptoms required immediate assessment and intervention, placing stress on existing personnel. Hence, adequate personnel was an important factor that could not be disregarded. Staff burn-out was a plausible issue that was recognized from the start and attempts were made to prevent burnout by creating an encouraging work environment and allowing frequent relieving of duties. Communicating the event to relevant departments ensured that the ED was adequately supported during the GE outbreak, both administratively and logistically. This was a reflection of the established communication channels. Leadership also had an essential and crucial role to play as the nursing and medical leaders had to be decisive, delegate roles and give concise instructions during the chaotic situation. The availability and access to ample logistical supplies saves on precious time, which allowed more focus on patients. In summary, procedures and protocols, together with staff preparedness, enhances an ED operational capability of effectively responding to mass gatherings.

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### (P2-39) Public Health Safety for Traditional Mass Gatherings in India: A 10-Year Analysis

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**Introduction:** In the past decade, India has witnessed many lapses in crowd safety during mass gatherings. The high casualty rate in stampedes during traditional mass gatherings has prompted the study of these events. Wide variations exist in casualty rates for similar events, and key issues in healthcare services in these special situations were addressed in the Indian context.

**Methods:** From 2001–2010, Mass gathering data were collected from news items reported in the archives of newspapers, “The Times of India”, “The Hindu” and “The Indian Express”. The keywords used were: “stampede”, “mass gathering”, “mass-gathering events”, “mass-gathering incidents”, “crowd”, and “crowd management”. The study included triggers for the incident and the number of casualties (dead and injured) in each incident.

**Results:** In 27 separate mass gatherings in India, there were 936 dead and 540 injured casualties. The unique characteristics of mass gatherings in India included a predominance of old and vulnerable people in traditional mass gatherings, in contrast to the young and middle-aged groups who gather for music and sporting events elsewhere. Further, alcohol/substance abuse, brawls, and violent behavior were absent at traditional Indian mass gatherings. Non-traditional mass gatherings accounted for a lesser number of incidents in India, and were located in movie theatres and railway stations.

**Conclusions:** In a populous country like India, traditional mass gatherings predominate, and ensuring the health, safety, and security of the public at such events will require an understanding of crowd behavior, critical crowd densities, and crowd capacities in the Indian context. However, planning for mass gatherings can be developed using the existing body of knowledge of mass-casualty preparedness, food safety, and health promotion.

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### (P2-40) Patient Allocation to Hospitals During Mass-Casualty Incidents

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Due to the limited resources of specialized hospital departments, the allocation of patients to different hospitals according to severity is an extraordinarily complex and time-critical problem. The emergency capacity was determined for all medical centers ( $n = 135$ ) in the State of Hessen, Germany, for patients of various triage categories (red, yellow, green) during normal working hours, and during weekends and nights and included logistic specifications of a potential helicopter landing. These data were entered into a state register. Using the data from the “acute-care-register”, a Ticket System was developed that allows operations management to assign patients according to the severity of their condition, urgency, and specialization requirements (e.g., neurosurgery, ophthalmology, pediatrics) to a hospital without exceeding the admission and/or treatment capacity of the hospital/facility. During a non-critical period, the order of allocations depending on the distance from the clinic is planned in advance so that no further modifications are necessary during the acute intervention phase of an emergency response. Additional notification of hospital capacities for severe casualties provided during the emergency response can be easily and immediately supplemented. Due to the relatively low frequency of such emergency responses, a cost-effective concept that is easily adaptable to the respective fields of application was decided upon. The system is a sticker